What is claimed is:

1. A method of a blind speech user interference cancellation (SUIC) for a high speed downlink packet access (HSDPA) comprising the steps of:

receiving (100) an input signal (22) in a discrete-time domain by a receiving and storing means (24) of a blind SUIC receiver (20, 21); and

separating (104) the input signal (22) to a desired HSDPA signal (34, 66) with known spreading codes and to an interfering speech user signal (48, 70) with unknown spreading codes using a Walsh correlator (32) of the blind SUIC receiver (20, 21) for further processing.

2. The method of claim 1, wherein the receiving and storing means (24) having a memory buffer for storing the input signal (22).

3. The method of claim 1, further comprising the steps of:

generating (106) a speech user interference (SUI) signal (52) by a soft-decision on the interfering speech user signal (48) using an SUI estimation means (46) of the blind SUIC receiver (20);

generating (107) an adjusted signal (30) by subtracting the SUI signal (52) from the input signal (22) using a first adder (28); and

providing (108) the adjusted signal (30) to the Walsh correlator (32).

4. The method of claim 3, further comprising the steps of:

separating (110) the adjusted signal (30) to a further desired HSDPA signal with the known spreading codes and a further interfering speech user signal with the unknown spreading codes using a Walsh correlator (32); and

generating (112) a soft-decision HSDPA signal (37) from the further desired HSDPA signal using a one-stage soft-decision parallel interference cancellation (SD-PIC) receiver (36).

5. The method of claim 4, wherein the soft-decision HSDPA signal (37) is a blind SUIC receiver output signal if a final multistage is reached based on predetermined criteria.

6. The method of claim 4, further comprising the steps of:

generating (115) a hard-decision HSDPA signal (38) based on the soft-decision HSDPA signal (37) using a hard-decision means (41).

generating (116) a multiple access interference (MAI) signal (42) based on the hard-decision HSDPA signal (38) using an MAI estimation means (40) of the blind SUIC receiver (20);

generating (118) a further adjusted signal (60) by subtracting the MAI signal (42) from the input signal (22) using a second adder (58); and

providing the further adjusted signal (60) to a further Walsh correlator (32a).

7. The method of claim 1, further comprising the step of:

generating (120) a soft-decision HSDPA signal (67) from the desired HSDPA signal (66) using a one-stage soft-decision parallel interference cancellation (SD-PIC) receiver (36).

8. The method of claim 7, wherein the soft-decision HSDPA signal (67) is a blind SUIC receiver output signal, if a final multistage is reached based on predetermined criteria.

9. The method of claim 7, further comprising the steps of:

generating (123) the hard-decision HSDPA signal (68) based on the soft-decision HSDPA signal (67) using a hard-decision means (41);

generating (124) a multiple access interference (MAI) signal (74) based on the hard-decision HSDPA signal (68) using an MAI estimation means (40) of the blind SUIC receiver (20);

generating (126) an adjusted signal (64) by subtracting the MAI signal (42) from the input signal (22) using a first adder (58); and

providing (127) the adjusted signal (64) to the Walsh correlator (32).

10. The method of claim 9, further comprising the steps of:

separating (128) the adjusted signal (64) to a further desired HSDPA signal with the known spreading codes and a further interfering speech user signal with the unknown spreading codes using a Walsh correlator (32);

generating (132) a speech user interference (SUI) signal (72) by a soft-decision on the further interfering speech user signal using an SUI estimation means (46) of the blind SUIC receiver (20);

generating (108) a further adjusted signal (76) by subtracting the SUI signal (52) from the input signal (22) using a second adder (28); and

providing the further adjusted signal (76) to a further Walsh correlator (32a).

11. A blind speech user interference cancellation (SUIC) receiver (20, 21) for a high speed downlink packet access (HSDPA) comprising:

a Walsh correlator (32), responsive to an input signal (22) in a discrete-time domain, for providing two signals for a further processing by separating the input signal (22) to a desired HSDPA signal (34, 66) with known spreading codes and to an interfering speech user (ISU) signal (48, 70) with unknown spreading codes; and

receiving and storing means (24), responsive to the input signal (22), for storing the input signal (22) and for providing the input signal (22) to the Walsh correlator (32, 32a).

12. The blind speech user interference cancellation (SUIC) receiver (20) of claim 11, further comprising:

an SUI estimation means (46), responsive to the interfering speech user signal (48), for providing a speech user interference (SUI) signal (52) by a soft-decision on the interfering speech user signal (48); and

a first adder (28), responsive to the SUI signal (52) and to the input signal (22), for providing an adjusted signal (30) to the Walsh correlator (32) by subtracting the SUI signal (52) from the input signal (22), wherein the Walsh correlator provides a further

desired HSDPA signal with the known spreading codes and a further interfering speech user (ISU) signal with the unknown spreading codes.

13. The blind speech user interference cancellation (SUIC) receiver (20) of claim 12, further comprising:

a one-stage soft-decision parallel interference cancellation (SD-PIC) receiver (36), responsive to the further desired HSDPA signal, for providing a soft-decision HSDPA signal (37).

14. The blind speech user interference cancellation (SUIC) receiver (20) of claim 13, wherein the soft-decision HSDPA signal (37) becomes a blind SUIC receiver output signal based on predetermined criteria.

15. The blind speech user interference cancellation (SUIC) receiver (20) of claim 13, further comprising:

a hard-decision means (41), responsive to the soft-decision HSDPA signal (37), for providing a hard-decision HSDPA signal (38);

an MAI estimation means (40), responsive to the hard-decision HSDPA signal (38), for providing a multiple access interference (MAI) signal (42); and

a second adder, responsive to the MAI signal (42) and to the input signal (22), for providing a further adjusted signal (62) by subtracting the MAI signal (42) from the input signal (22), wherein the further adjusted signal (64) is provided to a further Walsh correlator (32a).

16. The blind speech user interference cancellation (SUIC) receiver (21) of claim 11, further comprising:

a one-stage soft-decision parallel interference cancellation (HD-PIC) receiver (36), responsive to the desired HSDPA signal, for providing a soft-decision HSDPA signal (67).

17. The blind speech user interference cancellation (SUIC) receiver (21) of claim 16, wherein the soft-decision HSDPA signal (67) becomes a blind SUIC receiver output signal based on predetermined criteria.

18. The blind speech user interference cancellation (SUIC) receiver (21) of claim 17, further comprising:

a hard-decision means (41), responsive to the soft-decision HSDPA signal (67), for providing a hard-decision HSDPA signal (68);

an MAI estimation means (40), responsive to the hard-decision HSDPA signal (68), for providing a multiple access interference (MAI) signal (74); and

a first adder (28), responsive to the MAI signal (74) and to the input signal (22), for providing a further adjusted signal (64) to the Walsh correlator (32) by subtracting the MAI signal (74) from the input signal (22), wherein the Walsh correlator (32) provides a further desired HSDPA signal with known spreading codes and a further interfering speech user signal with unknown spreading codes.

19. The blind speech user interference cancellation (SUIC) receiver (21) of claim 18, further comprising:

an SUI estimation means (46), responsive to the further interfering speech user signal, for providing a speech user interference (SUI) signal (72) by a soft-decision on the further interfering speech user signal; and

a second adder (28), responsive to the SUI signal (72) and to the input signal (22), for providing a further adjusted signal (76) to a further Walsh correlator (32a) by subtracting the SUI signal (72) from the input signal (22).